

(19)



Europäisches Patentamt  
European Patent Office  
Office européen des brevets



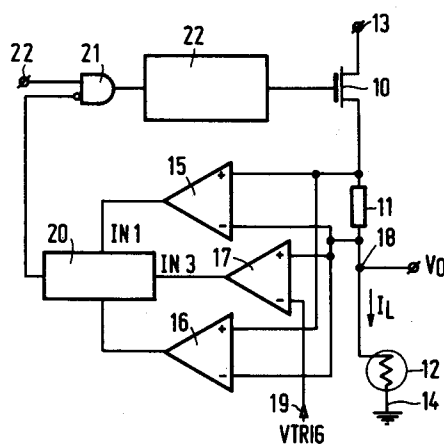
(11) Publication number:

**0 432 847 A3**

(12)

**EUROPEAN PATENT APPLICATION**(21) Application number: **90203232.5**(51) Int. Cl.<sup>5</sup>: **H02H 9/00, H05B 39/02,  
H03K 17/08**(22) Date of filing: **10.12.90**(30) Priority: **15.12.89 US 452092**(43) Date of publication of application:  
**19.06.91 Bulletin 91/25**(84) Designated Contracting States:  
**AT BE DE ES FR GB IT NL**(88) Date of deferred publication of the search report:  
**17.06.92 Bulletin 92/25**(71) Applicant: **N.V. Philips' Gloeilampenfabrieken  
Groenewoudseweg 1  
NL-5621 BA Eindhoven(NL)**(72) Inventor: **Wong, Stephen  
c/o INT. OCTROOIBUREAU B.V., Prof.  
Holstlaan 6  
NL-5656 AA Eindhoven(NL)**(74) Representative: **Dusseldorp, Jan Charles et al  
INTERNATIONAAL OCTROOIBUREAU B.V.  
Prof. Holstlaan 6  
NL-5656 AA Eindhoven(NL)**(54) **Bilevel current limiter.**

(57) A bilevel current limiting control circuit which enables a semiconductor controlled power switch with a limited power handling capability to operate near the inside border of the safe operating area (SOA) characteristic of the power switch. The control circuit is especially useful in limiting the turn-on inrush surge current to an incandescent lamp load supplied via the semiconductor power switch. The control circuit includes a series circuit made up of the power switch, a current sensing resistor and a lamp load connected to the terminals of a source of supply voltage. First and second comparison circuits, arranged to provide first and second different current limits for the control circuit, are connected to the sensing resistor. A third comparison circuit compares the load voltage with a reference voltage to control a selector device that selects the output of the first or second comparison circuit as a function of the level of the load voltage. The output of the selected comparison circuit is applied via a feedback circuit to a control electrode of the power switch so as to control the load current to the first and second current limit values as selected in response to the load voltage.

**FIG.2****EP 0 432 847 A3**



European Patent  
Office

## EUROPEAN SEARCH REPORT

Application Number

EP 90 20 3232

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
D,A	EP-A-0 285 417 (GENERAL ELECTRIC COMPANY) * column 5, line 32 - column 6, line 29 * ---	1,2,5	H02H9/00 H05B39/02 H03K17/08
A	FR-A-2 467 441 (FUJII PHOTO OPTICAL) * page 6, line 13 - page 7, line 11 * ---	1,2,5	
A	US-A-3 512 047 (CONTROL DATA CORPORATION) * column 3, line 38 - column 4, line 30 * -----	1,2,5	
			TECHNICAL FIELDS SEARCHED (Int. Cl.5)
			H02H H05B H03K
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 24 APRIL 1992	Examiner LIBBERECHT L. A.
<b>CATEGORY OF CITED DOCUMENTS</b>			
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons ..... & : member of the same patent family, corresponding document	